

**PATENT**

**ATTORNEY DOCKET NO.: DWP-1**

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

In re Application of: Marc Christian Davis	)	
	)	Examiner: Graham, Mark S
Serial No.: <b>10/606,987</b>	)	
	)	Art Unit: 3711
Filed: June 26, 2003	)	
	)	Deposit Acct. No.: 503176
Title: Laminated ball bat with engineered	)	
Sweet spot zone and method of making	)	
Same	)	

Commissioner of Patents  
P. O. Box 1450  
Alexandria, VA 22313-1450

Dear Sir/Madam:

**APPEAL BRIEF**

In response to an Office Action mailed on July 5, 2006, this Appeal Brief pursuant to 37 C.F.R. §§ 1.191-192 is submitted. A list of the various sections contained in this Appeal Brief is provided below.

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**(1) REAL PARTY OF INTEREST**

The party named in the caption of this Appeal Brief is the real party of interest.

**(2) RELATED APPEALS AND INTERFERENCES**

There are no related appeals or interferences.

**(3) STATUS OF CLAIMS**

Claims 1-8, 10-21, and 23-25 remain pending in the application with claim 1 and claim 13 being independent claims.

Claims 1-4, 6, 7, 11-16, and 18-20, and 24 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Bender et al. 6,007,440 in view of Smith 1,706,680.

Claims 5 and 17 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Bender et al. 6,007,440 in view of Smith 1,706,680 and Cook 4,714,251.

Claims 8 and 21 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Bender et al. 6,007,440 in view of Smith 1,706,680 and Winterowd et al. 5,944,938.

Claims 10, 22, and 23 stand rejected under 35 U.S.C. §103a as being unpatentable over Bender et al. 6,007,440 in view of Burns et al. 6,506,823.

Claims 12 and 25 stand rejected under 35 U.S.C. §103 as being unpatentable over Bender et al. 6,007,440 in view of You 4,572,508.

It should be noted that the most recent Office Action dated July 5, 2006 states that, claims 11-21 and 23-31 are pending in the application. As described below, it is respectively submitted that of claims 23-31, only claims 23-25 remain pending. Additionally, claim 10 remains pending.

The original application filed on June 26, 2003 included claims 1-31. A May 7, 2004 Office Action contended that such claims were subject to a restriction requirement and separated such claims into two groups: Group I claims included 1-25 and Group II claims included 26-31.

In an August 25, 2004 Office Action response, Group I (claims 1-25) was elected and Group II (claims 26-31) were withdrawn and filed in a continuing application which has recently been allowed.

In a March 4, 2005 response to a Final Action, Applicants submitted an RCE canceling claims 9 and 22 while adding new claims 32 and 33. At this point, claims 1-8, 10-21, 23-25, and 32-33 remained in the application.

In a November 14, 2005 response to an Office Action dated September 09, 2005, claims 32 and 33 were canceled. At this point claims 1-8, 10-21, and 23-25 remained in the application.

In May 24, 2006 response to a Final Office Action dated February 1, 2006 Applicants filed a second Request for Continued Examination adding claims 34-53 to the application. At this point, claims 1-8, 10-21, 23-25, and 34-35 remained in the application.

In a July 5, 2006 Office Actions, the newly submitted claims 34-35 were deemed to be directed to an invention that is independent or distinct from the invention originally claimed and previously elected as described above. Group 1 claims include 1-8, 10-21<sup>1</sup>, and 23-25 while Group 2 claims include 34-53. The Examiner constructively elected Group I since Applicants had previously elected and received an action on the merits for Group I claims and Group II claims were withdrawn from consideration.

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<sup>1</sup> The office action states Group I is 1-8, 11-21, and 23-25. However, Group I claims should also include claim 10.

#### **(4) STATUS OF AMENDMENTS**

No amendments touching on the merits of a claim are requested. All requested amendments, if any, have been entered by the Examiner.

#### **(5) SUMMARY OF INVENTION**

The invention relates to bats and the method of making bats although only apparatus claims are at issue in the appeal. In particular, the invention relates to solid laminated bats having an engineered sweet spot zone. The invention is particularly well suited for the field of baseball bats.

In hopes of better explaining the invention, the weight distribution of hollow Aluminum bats are first described. Consider the weight distribution properties of hollow aluminum bats. Such bats offer far more flexibility in engineering the location for the bats center of mass compared to the typical solid wood bats. For hollow aluminum bats, the thickness of the aluminum may be varied to change the location of the center of mass while maintaining the bat's length and overall shape. Thus, two aluminum bats may have identical external shapes and lengths but still have a different center of mass as the thickness of the aluminum used to make such bats may be different. Importantly, such bats will have different sweet spot zone characteristics. Typical ***solid*** wood bats cannot take advantage of such a feature as such bats are solid. Notably, many baseball league rules now require the use of solid wood bats. Using Applicants' invention, the center of mass for a solid wood bat may be varied while maintaining a particular bat shape, length and overall weight as previously described for aluminum bats.

The present technology relates to laminated ball bats and a methodology for making the same. The disclosed technology provides for a bat that is designed with a generic bat shape

(such as a bat consisting of a handle and a barrel where the handle has a smaller diameter than the barrel) that offers greater flexibility in changing the bat's weight distribution while maintaining a particular bat shape. Using lamination technology, various portions of a bat may be constructed having different densities (and associated weights) thereby decoupling such bat's length/weight properties. Thus, the resulting bat is a solid wood bat with unique length/weight properties. Such technology provides a method of positioning a bat's center of mass (CM) at various locations along the bat thereby changing the location of the bat's sweet spot zone center. Bats constructed in accordance with the disclosed technology may have a variety of pre-selected weight distributions while maintaining a particular bat shape and a particular overall bat weight.

Thus, in summary, the Applicants' application provides at least the following teachings:

- That a principal object of the invention is to provide solid laminated bats having the well-known handle/barrel shape, but with a variety of *pre-selected* weight distributions;
- That to achieve the above describe object of the invention, a veneer bat is constructed having *a plurality of bat portions constructed from a plurality of materials* having different densities and selecting the location of such portions;
- That the disclosed technology decouples a bat's length/weight properties, thereby allowing the bat's center of mass to be positioned at various predefined locations along the bat while maintaining a particular bat shape (length and size).
- The specification provides a definition of the term "sweet spot zone";
- The specification provides teachings as to how the "sweet spot zone" is linked to a bat's center of mass and how to position the sweet spot zone by selecting the position of at bat's center of mass.

## **(6) ISSUES**

It should be appreciated that by relying on 35 U.S.C. 103(a) for the basis of rejection for Claim 1 and Claim 13, the Examiner concedes that none of the cited references alone contain or teach all of the elements found in Applicants' Claim 1 and Claim 13 inventions. The issue becomes then, whether or not the cited references make the claimed 1 and 13 inventions (and the claims that depend there from) obvious.

More particularly, for claim 1, the issue is whether or not the prior art makes obvious a laminated bat comprising at least two portions where a different material is used in each portion so that the density of the two portions are different, and wherein the location of such portions is selected to provide for a bat having a center of mass located *between a predefined first-point and a predefined second-point* for a bat having a predetermined exterior outline.

The same issues described for claim 1 related to claim 13 although claim 13 comprises a bat having three sections "wherein the density of said first portion, the density of said second portion, the density of said third portion, the location of said first portion, the location of said second portion, and the location of said third portion are selected to provide for a bat having a center of mass located at a predefined point from the barrel end of the bat" for a bat having a predetermined exterior outline.

## **(7) GROUPING OF CLAIMS**

The claim groupings are as follows:

- Group 1: Claims 1-8, 10-12; and
- Group 2: Claims 13-21, 23-25.

## **(8) ARGUMENT**

The Applicants' respectfully traverse the grounds for rejection describe above for claims 1-8, 10-21, and 23-25 and submit the following arguments.

### **35 U.S.C. §103, Obviousness Rejections : Claims 1-8, 10-21, and 23-25**

Both independent claims 1 and 13 were contain a limitation requiring the claim 1 and 13 inventions to be constructed of at least two different types of material and wherein the density of a first portion, the density of a second portion, the location of said first portion, and the location of said second portion **are selected** to provide for a bat having a center of mass located between a predefined first-point and a predefined second-point. Claim 1 is presented below:

1. (previously presented) A solid laminated ball bat having a predetermined exterior outline, comprising:  
an elongated body disposed about a longitudinally extending axis, said body having an outer surface defined by the exterior outline of the bat, said body including a handle on one end and a barrel on the opposite end, said body including a label section connected between said handle and said barrel;  
said bat including in at least one of said handle, said barrel and said label section, at least a first plurality of thin strips, each thin strip defining a pair of opposed faces, each said face defining a substantially flat plane, each said plane being substantially parallel to the other, each said strip further defining a peripheral edge connecting said opposed faces, at least one face of one of said strips being bonded to a face of an adjacently disposed strip, said first plurality of bonded together strips defining a first portion of the bat;  
said bat further including in at least one of said handle, said barrel and said label section, at least a second plurality of thin strips, each thin strip defining a pair of opposed faces, each said face defining a substantially flat plane, each said plane being substantially parallel to the other, each said strip further defining a peripheral edge connecting said opposed faces, at least one face of one of said strips being bonded to a face of an adjacently disposed strip, said second plurality of bonded together strips defining a second portion of the bat;  
wherein at least one thin strip of said first plurality of thin strips is composed of **a first material**;  
wherein at least one thin strip of said second plurality of thin strips is composed of **a second material**;  
wherein the density of the first portion of the bat differs from the density of the second portion of the bat; and  
***wherein the density of said first portion, the density of said second portion, the location of said first portion, and the location of said second portion are selected to provide for a bat having a center of mass located between a predefined first-point and a predefined second-point.***

Thus claim 1 limitations require: (1) a laminated bat comprising at least two portions (2) where a different material is used in each portion so that the density of the two portions different, and (3) wherein the location of such portions is selected to provide for a bat having a center of mass located *between a predefined first-point and a predefined second-point* (4) for a bat having a predetermined exterior outline. Claim 13 contains similar limitations and the arguments presented for claim 1 applied to claim 13.

Such features are not found in the base reference Bender et al. It is respectfully submitted that none of the remaining references cited in the Office Action cure such deficiency in the base reference Bender et al. In fact, it is respectfully submitted that Bender et al. teaches away from the Applicants' invention.

First, Bender et al. teaches constructing a bat using only one type of wood but TESTING each individual piece of wood so that a bat may be constructed using more dense wood in areas where the ball normally strikes the bat. Restated, Bender et al. know that the density of pine (for example) will not be uniform for all pieces of pine wood. Thus, Bender et al. simply exploit the natural variances in a particular wood type where such variances relate to the densities of the wood so that more dense wood can be positioned at locations where the ball normally strikes a bat thereby making a stronger bat. However, all wood used in the Bender et al. bat must be TESTED.

In contrast, the Applicant's invention requires NO TESTING of the wood to construct a bat comprising two sections having different densities as the Applicants' teach using two different materials that naturally have different densities. The Applicants' specification clearly states a goal of varying the weight distribution of a bat according to predefined parameters.



Indeed, the majority of the specification is devoted to describing a “bat” apparatus, and a method of making such an apparatus, having a variety of weight distributions by constructing a bat having at least two portions, where, for example, the density of the first portion, the density of the second portion, the location of the first portion, and the location of the second portion are selected to provide for a bat having a sweet spot zone (and center of mass) located between a predefined first-point and a predefined second-point.

For example, the specification teaches the following:

The present technology allows the location of wood of greater density in the portions of the bat that are anticipated to contact the ball during the batter’s intended swing at desired pitches to hit. Such technology allows for a bat design that is better tailored to the batter’s specifications. [Applicants’ Application: Page 8, L19-L22]

The specification further teaches:

Notably, for a presently preferred embodiment described above, each of the first and second barrel portions (40, 42) is the same *size* and adjacent to each other. It will be appreciated, however, that such barrel portions (40, 42) may run the length of the barrel or only part of the length of the barrel. In addition, such portions (40, 42) may be ***different in length and width and height*** [i.e. difference sizes], and such barrel portions (40, 42) ***may or may not be adjacent to each other*** [i.e. the location is selectable]. Additionally, such technology may be used to ***construct only non-barrel portions*** of bat (10), such as the handle section or the label section. And in some embodiments, each ***portion can be disposed in a different section*** (handle, label and barrel) than the other portion. In yet other embodiments, at least one portion can extend into two of the bat’s sections (handle, label, barrel) while another portion can extend into the same two of the different sections or only one other section, either wholly or partially. [Applicants’ application: Page 13, L14 – Page 14, L1] [emphasis added]

Benter et al. provide no such teachings.

Second, Bender et al. provide no teachings related to the center of mass and no teachings related to selecting various bat properties so as to strategically position the bat’s sweet spot zone for a bat having a predetermined exterior outline as claimed by the Applicants.

The Applicant’s written description describes a primary object of the invention as follows:

It is a principal object of the present invention to provide solid laminated bats having the well-known handle/barrel shape, but with a **variety of pre-selected weight distributions**. It is another principal object of the present invention to provide such bats **having a variety of weight distributions while maintaining a particular shape and a particular overall weight for the bat**. The disclosed technology provides for a bat that is designed with a generic bat shape (such as a bat consisting of a handle and a barrel where the handle has a smaller diameter than the barrel) that **offers greater flexibility in changing the bat's weight distribution**.

It also is a principal object of the present invention to provide a method of making a bat that will enable a bat's weight distribution to be varied so as to optimize the energy transfer to the ball based on the way the batter anticipates that the bat will be swung and the way the batter anticipates that the pitcher will throw the pitch. [Applicants' application: P3, L1-L13] [Emphasis added]

Indeed, as shown in Fig. 10, it is possible for a bat constructed according to the disclosed teachings to have a plurality of bat portions that may vary in size, location and density to engineer the sweet spot zone.

Conventional prior art solid wood bat designs afford little opportunity to vary the location of a bat's CM without altering the shape of the bat as the length/weight properties of conventional prior art solid wood bats are coupled. . . . In contrast, using the disclosed technology to engineer the location of a bat's sweet spot zone, a variety of bats can be manufactured giving a batter a choice as to which bat attributes are more important based on such batter's anticipated swing and the pitcher's anticipated pitch. ***The disclosed technology decouples a bat's length/weight properties, thereby allowing the bat's CM to be positioned at various locations along the bat.*** [Applicants' Application: Page 24, L8 –L 17] [emphasis added]

As noted in the specification, embodiments of the Applicants' invention allow a solid bat's length/weight properties to be decoupled, an attribute typically only found in hollow bats such as aluminum bats. The specification further defines the term "sweet spot zone" as follows:

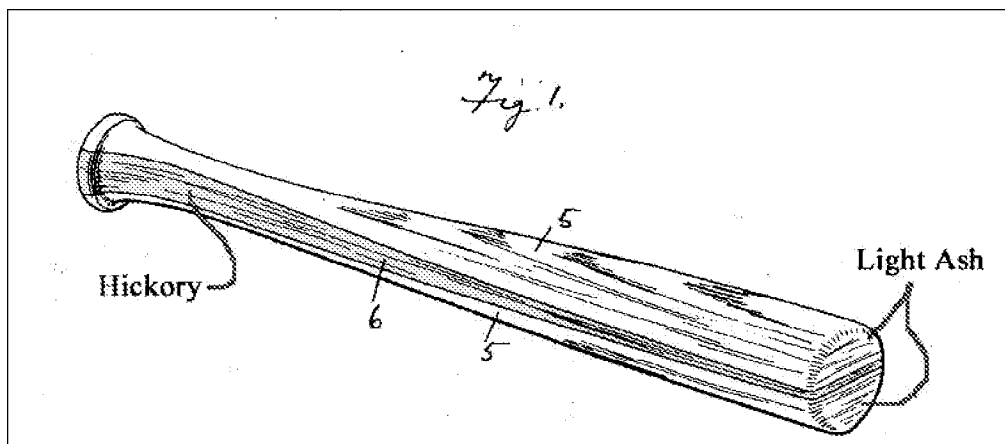
***From the above example, those of ordinary skill in the art would understand that the bat/ball contact point that maximizes hit ball speed is between the bat's CM and the barrel end (22) of the bat.*** Such a point along a bat where maximum hit ball speed is achieved is referred to as the center of the bat's "sweet spot zone." The sweet spot zone is generally defined as the area on a

racket, club, bat, or paddle where hits are most effective. For a bat, the sweet spot zone is a region on the surface of a bat that is moving with a given momentum and most effectively transfers such momentum to a hit ball. More particularly, the sweet spot zone includes a point of contact (for a ball having a given trajectory and momentum) on the bat's surface that is moving with a moment of inertia and maximizes energy transfer from bat to ball. [Applicants' Application: Page 24, L8 –L 17] [emphasis added]

Benter et al. provides no such teachings.

In an attempt to cure such deficiencies in the Bender et al. reference, the Examiner combines Bender et al. with Smith 1,706,680 and contends that such references together make the Applicants' Claim 1 and 13 inventions obvious. More specifically, the Examiner contends that Smith teaches the use of different materials to obtain different densities. Smith does that different wood will have different densities, however, it is respectfully submitted the Applicants' claimed invention is still patentable over such references taken alone or in combination as the Bender et al. reference, as described above, is lacking much more than the described Smith teachings.

In any event, the Smith reference is now considered. The Smith bat is shown in modified Fig. 1 below:



Smith does teach a bat comprising “a plurality of layers of wood, in laminated form, the outermost laminations being of light ash or equivalent wood and the center lamination being of hickory or equivalent wood.”

The present invention relates to a base ball bat and has for its prime object to provide a bat comprising a plurality of layers of wood, in laminated form, the two outermost laminations being of light ash or equivalent wood and the center lamination being of hickory or equivalent wood, thereby providing a bat which is exceedingly strong and durable, yet light and well balanced.

[Smith C1, L1-L9]

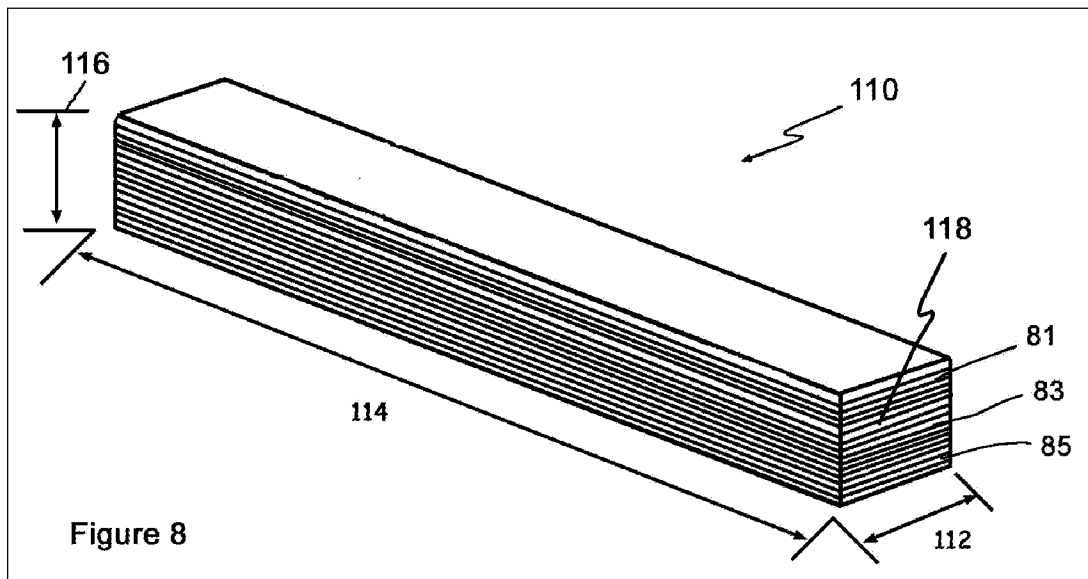
In addition, Smith teaches the shaping the hickory lamination to bring “the weight of the bat back to the handle or batter, thereby providing a good balance.”

strength. The hickory insert is inlaid about one-eighth of an inch at the large end of the bat or batting end and tapering back to about three quarters of an inch or larger at the handle making a very strong bat, and also brings the weight of the bat back to the handle or batter, thereby providing a good balance. It is also to be noted that the grain of the laminations extend in parallelism with the laminations and with one another, so that the bat is very hard to break, when properly used with the “grain up” as is the common expression in base ball parlance.

[Smith, C2, L41-L52]

Thus, Smith teaches a bat having three laminated sections where the sections are composed of two different types of wood having two different densities. In addition, Smith teaches shaping the center lamination to change the weight distribution of the bat to “provide good balance.” However, such teachings along or in combination with Bender et al. still do not make the Applicants’ invention obvious.

First, the Applicants’ claim 1 invention requires “said bat [to] include[e] in at least one of said handle, said barrel and said label section, *at least a first plurality of thin strips*” and further including in at least one of said handle, said barrel and said label section, *at least a second plurality of thin strips*. Consider the embodiments depicted in Figure 8 and Figure 10 provided below.





overcome the above identified deficiency in the base reference. The remaining depend claims simply add further patentably distinguishable features to the claim 1 and 13 inventions. For at least these reasons, Applicants respectfully traverse the above identified 103 rejections and submit that the rejected claims are in condition for allowance.

### **CLAIMS 6 and 7 and 18-20**

As for dependent claims claim 6 and 7 and 18-20, such claims require the thin strips making up the bat to have a thickness of either (a) about  $1/32^{\text{nd}}$  of an inch to about  $1/12^{\text{th}}$  of an inch or (b) about 0.00787 inches to about 0.375 inches. Using such thin strips one can better position a bat's sweet spot zone or center of mass. None of the cited references provide for such teachings nor do they make such a feature obvious. Only after reading the Applicant's disclosure do such teachings become obvious and it is well established that "simplicity and hindsight are not proper criteria for resolving the issue of obviousness."<sup>2</sup>

For at least this reason, it is respectfully submitted that claims claim 6 and 7 and 18-20 patentable over the cited references alone or in combination.

### **35 U.S.C. §103, Obviousness Rejections : Claims 5 and 17**

Claims 5 and 17 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Bender et al. 6,007,440 in view of Smith 1,706,680 and Cook 4,714,251.

Claims 5 and 17 are presented below:

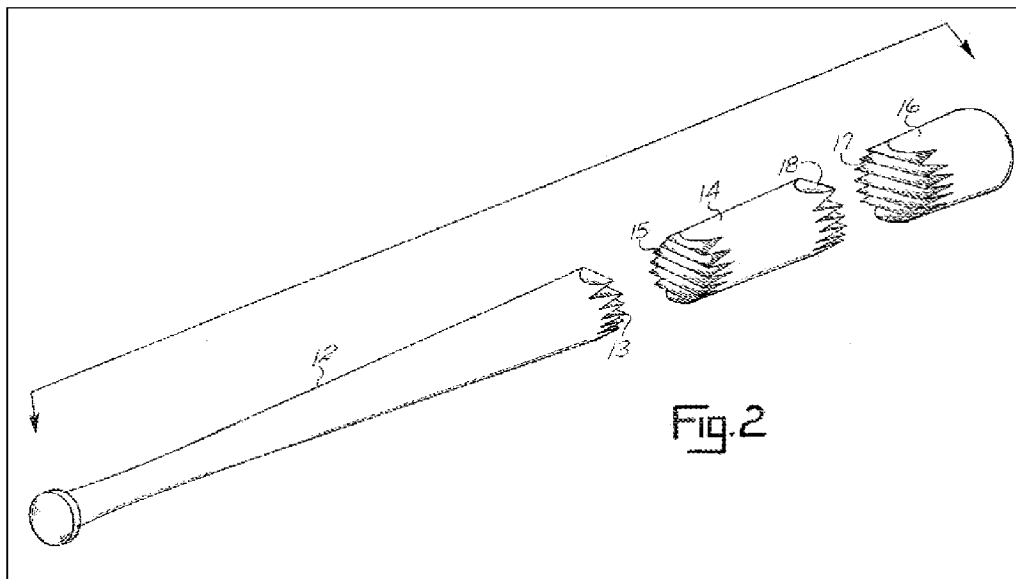
5. (previously presented) A solid laminated ball bat as in claim 1, wherein first and second portions are disposed apart from each other.

17. (previously presented) A laminated ball bat as in claim 13, wherein said first, second and third portions of the bat are disposed apart from each other.

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<sup>2</sup> Ex parte Clapp, 227 U.S.P.Q. 972, 973 (PTO Bd. App. 1985).

The Cook Reference is now considered. Cook teaches a bat comprising three distinct solid wood bat portions laminated to form the bat. Cook Fig. 2 is presented below:



Cook provides the following teachings:

The ball bat 10 shown in the drawings includes three distinct portions, namely, a handle portion 12, an intermediate or ball-striking portion 14, and a barrel end portion 16. [Cook, C1, L58-60]

A complete bat 10 is first formed in individual parts. Handle **portion 12** is formed of a **light wood**, preferably white ash and includes formed finger joints 13. In a 34-inch bat, the handle portion 12 will be approximately 23 inches in length. Ball-striking **portion 14** is formed of a **heavy wood**, preferably hickory, and includes formed finger joints 15, 18 at each end thereof. Striking portion 14 is approximately 7 inches in length. Bat barrel **end portion 16** is formed of a **soft wood**, such as soft maple, and includes finger joints 17. [Cook C2, L5-L19]

As presented above, Cook teaches forming three solid bat sections each made from different types of wood and then joining the three bat sections to form a bat. Notably two of the bat sections will be disposed apart from each other.

The stated objectives of the Cook invention is to: (1) provide for an improved laminated baseball bat, (2) provide for a laminated baseball bat which is more durable than previous bats, and (3) provide for a laminated baseball bat which reduces slide-off spin of a batted ball.



Note that Cook does not mention engineering the sweet spot zone of the bat using a plurality of bat sections composed of thin strips having different densities where the bat sections are disposed apart from each other as claimed by the Applicants'. The Examiner has merely found elements in separate prior patents that are similar to the Applicants' claim 5 and claim 17 inventions. The Examiner has not shown where such references teach obviously combining the three references to create the Applicants' claimed inventions.

As is well known, "obviousness cannot be established by combining the teachings of the prior art to produce the claimed invention, absent some teaching or suggestion supporting the combination. Under section 103, teachings of references can be combined only if there is some suggestion or incentive to do so."<sup>3</sup> (emphasis original) Indeed, "virtually all inventions are necessarily combinations of old elements. The notion, therefore, that combination claims can be declared invalid merely upon finding similar elements in separate prior patents would necessarily destroy virtually all patents and cannot be the law under the statute, ' 103.'"<sup>4</sup> Consequently, "the task of the Patent Office is essentially a burden of proof not just to show prior patents with selected elements similar to respective parts of a claimed combination, but to show teachings to support obviously combining the elements in the manner claimed."<sup>5</sup> "[S]implicity and hindsight are not proper criteria for resolving the issue of obviousness."<sup>6</sup>

Based on the above arguments, it is respectfully submitted that none of the secondary references suggest nor do they provide motivation to combine the teachings of the various secondary references with the Bender et al. teachings to achieve the Applicants' claim 5 and 17 inventions. It is respectfully submitted, therefore, that none of the cited secondary references

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<sup>3</sup> Graham v. John Deere Co., 381 U.S. 1, 148 U.S.P.Q. 459 (S. Ct. 1966)

<sup>4</sup> Panduit Corp. v. Dennison Manufacturing Co., 1 U.S.P.Q. 2d 1593, 1603 (Fed. Cir. 1987; footnotes omitted).

<sup>5</sup> ACS Hospital Systems, Inc. v. Montefiore Hospital, 221 U.S.P.Q. 929, 933 (Fed. Cir. 1984).

<sup>6</sup> Ex parte Clapp, 227 U.S.P.Q. 972, 973 (PTO Bd. App. 1985).

overcome the above identified deficiency in the base reference. For at least these reasons, Applicants respectfully traverse the above identified 103 rejections and submit that the rejected claims are in condition for allowance.

## **(9) Claims**

Claims 1-8, 10-21, and 23-25 remain pending in the application. Claim 1 and Claim 13 are independent claims.

**1. (previously presented)** A solid laminated ball bat having a predetermined exterior outline, comprising:

an elongated body disposed about a longitudinally extending axis, said body having an outer surface defined by the exterior outline of the bat, said body including a handle on one end and a barrel on the opposite end, said body including a label section connected between said handle and said barrel;

said bat including in at least one of said handle, said barrel and said label section, at least a first plurality of thin strips, each thin strip defining a pair of opposed faces, each said face defining a substantially flat plane, each said plane being substantially parallel to the other, each said strip further defining a peripheral edge connecting said opposed faces, at least one face of one of said strips being bonded to a face of an adjacently disposed strip, said first plurality of bonded together strips defining a first portion of the bat;

said bat further including in at least one of said handle, said barrel and said label section, at least a second plurality of thin strips, each thin strip defining a pair of opposed faces, each said face defining a substantially flat plane, each said plane being substantially parallel to the other, each said strip further defining a peripheral edge connecting said opposed faces, at least one face of one of said strips being bonded to a face of an adjacently disposed strip, said second plurality of bonded together strips defining a second portion of the bat;

wherein at least one thin strip of said first plurality of thin strips is composed of a first material;

wherein at least one thin strip of said second plurality of thin strips is composed of a second material;

wherein the density of the first portion of the bat differs from the density of the second portion of the bat; and

wherein the density of said first portion, the density of said second portion, the location of said first portion, and the location of said second portion are selected to provide for a bat having a center of mass located between a predefined first-point and a predefined second-point.

2. (previously presented) A solid laminated ball bat as in claim 1, wherein the density of said first portion of the bat is substantially uniform and wherein the density of said second portion of the bat is substantially uniform.

3. (previously presented) A solid laminated ball bat as in claim 1, wherein said bat is a baseball bat.

4. (previously presented) A solid laminated ball bat as in claim 1, wherein said first and second portions are disposed adjacent to one another.

5. (previously presented) A solid laminated ball bat as in claim 1, wherein first and second portions are disposed apart from each other.

6. (previously presented) A solid laminated ball bat as in claim 1, wherein each of said first plurality of thin strips has a thickness defined as the shortest distance between said opposed faces and wherein said thickness is between about  $1/32^{\text{nd}}$  of an inch to about  $1/12^{\text{th}}$  of an inch.

7. (previously presented) A solid laminated ball bat as in claim 1, wherein each of said second plurality of thin strips has a thickness defined as the shortest distance between said opposed faces and wherein said thickness is between about 1/32<sup>nd</sup> of an inch to about 1/12<sup>th</sup> of an inch.

8. (previously presented) A solid laminated ball bat as in claim 1, wherein each of said opposed faces are bonded together by one of an urea resin formulated with a powdered catalyst and a type 1 waterproof glue formulated with a powdered catalyst.

9. (canceled) A solid laminated ball bat as in claim 1, further comprising a sealant applied over said outer surface of the bat.

10. (previously presented) A solid laminated ball bat as in claim 1, further comprising a catalyzed lacquer protectant applied over said outer surface of the bat.

11. (previously presented) A solid laminated ball bat as in claim 1, wherein said first material is composed of a cellulosic material, such cellulosic material being selected from the group consisting of: maple, mahogany, ash, cherry, poplar, gum, tupelo and pine.

12. (previously presented) A solid laminated ball bat as in claim 1, wherein at least one thin strip of said first plurality of thin strips is composed of a composite material.

**13. (previously presented)** A laminated ball bat having a predetermined exterior outline, comprising:

an elongated body symmetrically disposed about a longitudinally extending axis, said body having an outer surface defined by the exterior outline of the bat, said body including a handle on one end and a barrel on the opposite end, said body including a label section connected between said handle and said barrel, said barrel having a free end disposed opposite where said barrel is connected to said label section, said handle having a free end disposed opposite where

said handle is connected to said label section, said body defining a mid plane disposed transversely relative to said longitudinal axis and midway between said free end of said barrel and said free end of said handle;

said bat including a first plurality of thin strips, each said thin strip defining a pair of opposed faces, each said face defining a substantially flat plane, each said plane being substantially parallel to the other plane, each said thin strip further defining a peripheral edge connecting said opposed faces and defining a section of the exterior outline of the bat, at least one face of one of said thin strips being bonded to a opposed face of an adjacently disposed thin strip such that the peripheral edges of said pair of adjacently disposed and bonded thin strips form a first section of the uninterrupted exterior outline of the bat, said first plurality of bonded together thin strips defining a first portion of the bat, said first portion of the bat defining a first outermost face and a second outermost face disposed opposite said first outermost face;

said bat further including a second plurality of thin strips, each said thin strip defining a pair of opposed faces, each said face defining a substantially flat plane, each said plane being substantially parallel to the other plane, each said thin strip further defining a peripheral edge connecting said opposed faces and defining a section of the exterior outline of the bat, at least one face of one of said thin strips being bonded to an opposed face of an adjacently disposed thin strip such that the peripheral edges of said pair of adjacently disposed and bonded thin strips form a second portion of the uninterrupted exterior outline of the bat, said second plurality of bonded together thin strips defining a second portion of the bat, said second portion of the bat defining a first outermost face and a second outermost face disposed opposite said first outermost face;

said bat further including a third plurality of thin strips, each said thin strip defining a pair of opposed faces, each said face defining a substantially flat plane, each said plane being substantially parallel to the other plane, each said thin strip further defining a peripheral edge connecting said opposed faces and defining a section of the exterior outline of the bat, at least one face of one of said thin strips being bonded to a face of an adjacently disposed thin strip such that the peripheral edges of said pair of adjacently disposed and bonded thin strips form a third section of the uninterrupted exterior outline of the bat, said third plurality of bonded together strips defining a third portion of the bat, said third portion of the bat defining a first outermost face and a second outermost face disposed opposite said first outermost face;

wherein at least one thin strip of said first plurality of thin strips is composed of a first material;

wherein at least one thin strip of said second plurality of thin strips is composed of a second material;

wherein the density of the first portion of the bat differs from the density of the second portion of the bat and the length of the first portion of the bat differs from the length of the second portion of the bat; and

wherein the density of said first portion, the density of said second portion, the density of said third portion, the location of said first portion, the location of said second portion, and the location of said third portion are selected to provide for a bat having a center of mass located at a predefined point from the barrel end of the bat.

14. (previously presented) A laminated ball bat as in claim 13, wherein at least one of said first portion, said second portion, and said third portion have a substantially uniform density.

15. (previously presented) A laminated ball bat as in claim 13, wherein the density of said first portion of the bat differs for the density of said third portion of the bat.

16. (previously presented) A laminated ball bat as in claim 13, wherein at least two of said first, second and third portions of the bat are disposed adjacent to one another.

17. (previously presented) A laminated ball bat as in claim 13, wherein said first, second and third portions of the bat are disposed apart from each other.

18. (previously presented) A laminated ball bat as in claim 13, wherein each of said first plurality of thin strips has a thickness defined as the shortest distance between said opposed faces and wherein said thickness is between about  $1/32^{\text{nd}}$  of an inch to about  $1/12^{\text{th}}$  of an inch.

19. (previously presented) A laminated ball bat as in claim 13, wherein each of said second plurality of thin strips has a thickness defined as the shortest distance between said opposed faces and wherein said thickness is between about  $1/32^{\text{nd}}$  of an inch to about  $1/12^{\text{th}}$  of an inch.

20. (previously presented) A laminated ball bat as in claim 13, wherein each of said third plurality of thin strips has a thickness defined as the shortest distance between said opposed faces and wherein said thickness is between about 0.00787 inches to about 0.375 inches.

21. (previously presented) A laminated ball bat as in claim 13, wherein each of said opposed faces are bonded together by one of an urea resin formulated with a powdered catalyst and a type 1 waterproof glue formulated with a powdered catalyst.

22. (canceled) A laminated ball bat as in claim 13, further comprising a sealant applied over said outer surface of the bat.

23. (previously presented) A laminated ball bat as in claim 13, further comprising a catalyzed lacquer protectant applied over said outer surface of the bat.



24. (previously presented) A laminated ball bat as in claim 13, wherein at least one thin strip of said first plurality of thin strips is composed of a cellulosic material selected from the group consisting of: maple, mahogany, ash, cherry, poplar, gum, tupelo and pine.

25. (previously presented) A laminated ball bat as in claim 13, wherein at least one thin strip is composed of a composite material.

26. (withdrawn) A method of making a laminated ball bat, said method comprising the steps of:

providing a first laminated block, said first laminated block comprising a plurality of successively adjacent thin strips wherein adjacent thin strips are bonded together by a bonding agent;

providing a second laminated block, said second laminated block comprising a plurality of successively adjacent thin strips wherein adjacent thin strips are bonded together by a bonding agent wherein the density of said second laminated block differs from the density of said first laminated block;

bonding said first laminated block to said second laminated block to form a laminated blank;

subjecting said laminated blank to a pressure in a range of about 100 pounds per square inch to about 250 pounds per square inch;

maintaining said laminated blank under pressure in said range until said laminated blank has cured thereby forming a cured laminated blank; and

machining said cured laminated blank to form an elongated body disposed about a longitudinally extending axis, said body having an outer surface defined by the exterior outline

of a bat, said body including a handle on one end and a barrel on the opposite end, said body including a label section connected between said handle and said barrel.

27. (withdrawn) A method of making a laminated ball bat according to claim 26, further comprising the step of heating said laminated blank with radio frequency waves during the step of subjecting said laminated blank to pressure.

28. (withdrawn) A method of making a laminated ball bat according to claim 26, wherein said successively adjacent thin strips are composed of veneer strips having a thickness of between about 0.00787 inches to about 0.375 inches.

29. (withdrawn) A method of making a laminated ball bat according to claim 26, wherein said bonding agent is one of a liquid urea resin formulated with a powdered catalyst and a type 1 waterproof glue formulated with a powdered catalyst.

30. (withdrawn) A method of making a laminated ball bat according to claim 26, further comprising the step of applying a sealer to said machined laminated bat thereby creating a sealed bat.

31. (withdrawn) A method of making a laminated ball bat according to claim 26, further comprising the steps of sanding said sealed bat to remove any rough areas from the surface of such sealed bat and applying a coat of catalyzed lacquer to said sanded surface.

(canceled) A solid laminated ball bat as in claim 1, wherein said predefined first-point is located a distance of about 6% of the total length of the bat from the barrel end of the bat and said predefined second-point is located a distance of about 18% of the total length of the bat from the barrel end of the bat.

32. (canceled) A solid laminated ball bat as in claim 1, wherein said predefined first-point is located a distance of about 6% of the total length of the bat from the barrel end of

the bat and said predefined second-point is located a distance of about 18% of the total length of the bat from the barrel end of the bat.

33. (canceled)            A laminated ball bat as in claim 13, wherein said predefined point is located between a distance of about 6% of the total length of the bat from the barrel end of the bat and a distance of about 18% of the total length of the bat from the barrel end of the bat.

34. (withdrawn) A solid laminated blank suitable for machining to form a laminated bat, said laminated blank comprising:

an elongated blank body disposed about a longitudinally extending axis, said blank body having an outer surface defined by the exterior outline of the blank, said blank body composed of a plurality of blank portions;

a first plurality of thin strips, each thin strip defining a pair of opposed faces, each said face defining a substantially flat plane, each said plane being substantially parallel to the other, each said strip further defining a peripheral edge connecting said opposed faces, at least one face of one of said strips being bonded to a face of an adjacently disposed strip, said first plurality of bonded together strips defining a first portion of the blank;

a second plurality of thin strips, each thin strip defining a pair of opposed faces, each said face defining a substantially flat plane, each said plane being substantially parallel to the other, each said strip further defining a peripheral edge connecting said opposed faces, at least one face of one of said strips being bonded to a face of an adjacently disposed strip, said second plurality of bonded together strips defining a second portion of the blank;

wherein at least one thin strip of said first plurality of thin strips is composed of a first material;

wherein at least one thin strip of said second plurality of thin strips is composed of a second material;

wherein the density of the first portion of the bat differs from the density of the second portion of the bat;

wherein at least one of the length of the first portion of the blank and the width of the first portion of the blank is different from that of the second portion of the blank creating size delta value; and

wherein the density of said first portion, the density of said second portion, the location of said first portion, the location of said second portion, and the size delta value are selected to provide for a blank having a predefined weight distribution.

35. (withdrawn) A solid laminated blank as in claim 34, wherein the laminated blank is machined to form a machined elongated body disposed about said longitudinally extending axis, said machined body having an outer surface defined by the exterior outline of a bat, said body including a handle on one end and a barrel on the opposite end, said body including a label section connected between the handle and said barrel.

36. (withdrawn) A solid laminated blank as in claim 34, wherein the opposed faces of said first plurality of thin strips are substantially perpendicular to the opposed faces of said second plurality of thin strips.

37. (withdrawn) A solid laminated blank as in claim 34, wherein said first plurality of thin strips and said second plurality of thin strips are disposed apart to one another along the width of the bat.

38. (withdrawn) A solid laminated blank as in claim 36, wherein said first plurality of thin strips and said second plurality of thin strips are disposed apart to one another along the length of the bat.

39. (withdrawn) A solid laminated blank as in claim 34, wherein the density of said first portion of the blank is substantially uniform and wherein the density of said second portion of the blank is substantially uniform.

40. (withdrawn) A solid laminated blank as in claim 34, wherein each of said first plurality of thin strips has a thickness defined as the shortest distance between said opposed faces and wherein said thickness is between about  $1/32^{\text{nd}}$  of an inch to about  $1/12^{\text{th}}$  of an inch.

41. (withdrawn) A solid laminated blank as in claim 40, wherein at least two thin strips of said second plurality of thin strips have a different thickness.

42. (withdrawn) A solid laminated blank as in claim 34, wherein each of said second plurality of thin strips has a thickness defined as the shortest distance between said opposed faces and wherein said thickness is between about  $1/32^{\text{nd}}$  of an inch to about  $1/12^{\text{th}}$  of an inch.

43. (withdrawn) A solid laminated blank as in claim 42, wherein at least two thin strips of said first plurality of thin strips have a different thickness.

44. (withdrawn) A solid laminated blank as in claim 34, wherein each of said opposed faces are bonded together by one of an urea resin formulated with a powdered catalyst and a type 1 waterproof glue formulated with a powdered catalyst.

45. (withdrawn) A solid laminated blank as in claim 34, wherein said first material is composed of a cellulosic material, such cellulosic material being selected from the group consisting of: maple, mahogany, ash, cherry, poplar, gum, tupelo and pine.

46. (withdrawn) A solid laminated blank as in claim 34, wherein at least one thin strip of said first plurality of thin strips is composed of a composite material.

47. (withdrawn) A laminated blank having a predetermined exterior outline suitable for machining into a laminated body having a predefined weight distribution wherein said laminated body is used for striking a ball, said laminated blank comprising:

an elongated blank body symmetrically disposed about a longitudinally extending axis and comprising a plurality of laminated blocks including a first, second and third block;

wherein said first laminated block is composed of a first plurality of thin strips, each said thin strip defining a pair of opposed faces, each said face defining a substantially flat plane, each said plane being substantially parallel to the other plane, each said thin strip further defining a peripheral edge connecting said opposed faces and defining a section of the exterior outline of the block, at least one face of one of said thin strips being bonded to a opposed face of an adjacently disposed thin strip such that the peripheral edges of said pair of adjacently disposed and bonded thin strips form an uninterrupted exterior outline of the block, said first block defining a first portion of the blank;

wherein said second laminated block is composed of a second plurality of thin strips, each said thin strip defining a pair of opposed faces, each said face defining a substantially flat plane, each said plane being substantially parallel to the other plane, each said thin strip further defining a peripheral edge connecting said opposed faces and defining a section of the exterior outline of the block, at least one face of one of said thin strips being bonded to an opposed face of an adjacently disposed thin strip such that the peripheral edges of said pair of adjacently disposed and bonded thin strips form an uninterrupted exterior outline of the block, said second plurality of bonded together thin strips defining a second portion of the blank;

wherein said third block is composed of a third plurality of thin strips, each said thin strip defining a pair of opposed faces, each said face defining a substantially flat plane, each said plane being substantially parallel to the other plane, each said thin strip further defining a peripheral edge connecting said opposed faces and defining a section of the exterior outline of the block, at least one face of one of said thin strips being bonded to a face of an adjacently

disposed thin strip such that the peripheral edges of said pair of adjacently disposed and bonded thin strips form a third section of the uninterrupted exterior outline of the blank, said third plurality of bonded together strips defining a third portion of the blank;

wherein at least one thin strip of said first plurality of thin strips is composed of a first material and wherein at least one thin strip of said second plurality of thin strips is composed of a second material;

wherein the density of the first material differs from the density of the second material; and

wherein the length of the first block differs from the length of the second block thereby defining a length delta.

48. (withdrawn) A laminated blank having a predetermined exterior as in claim 47, wherein the density of said first block, the density of said second block, the density of said third block, the location of said first block, the location of said second block, the location of said third block, and the length delta are selected to provide for a laminated blank having a center of mass located at a predefined point along said longitudinally extending axis.

49. (withdrawn) A laminated blank having a predetermined exterior as in claim 47, wherein the opposed faces of said first plurality of thin strips are substantially perpendicular to the opposed faces of said second plurality of thin strips.

50. (withdrawn) A laminated blank having a predetermined exterior as in claim 47, wherein said first block and said second block are disposed apart to one another along the width of the bat.



51. (withdrawn) A laminated blank having a predetermined exterior as in claim 47, wherein said first block and said second block are disposed apart to one another the length of the bat.

52. (withdrawn) A laminated blank having a predetermined exterior as in claim 47, wherein each of said first plurality of thin strips has a thickness defined as the shortest distance between said opposed faces and wherein said thickness is between about  $1/32^{\text{nd}}$  of an inch to about  $1/12^{\text{th}}$  of an inch.

53. (withdrawn) A laminated blank having a predetermined exterior as in claim 47, wherein each of said third plurality of thin strips has a thickness defined as the shortest distance between said opposed faces and wherein said thickness is between about 0.00787 inches to about 0.375 inches.

Based on the above arguments, Applicants respectfully request favorable action and withdrawal of the present rejections for all claims. The Examiner is invited to call the undersigned at his convenience to resolve any remaining issues. Please charge any additional fees required by this Amendment to Deposit Account No. 503176.

Respectfully submitted,

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Date



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